ABSTRACT OF THE DISCLOSURE

GDNF alpha 3 receptor polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing GDNF alpha 3 receptor polypeptides and polynucleotides in the design of protocols for the treatment of neurodegenerative diseases (such as Parkinson's Disease, amyotrophic lateral sclerosis (ALS), spinal muscular atrophy (SMA), Huntington's Disease, Alzheimer's Disease, diabetic neuropathy), muscular diseases (including the muscular dystrophies) and nerve and muscle trauma, among others and diagnostic assays for such conditions.